Region 2 Enforcement & Compliance Assurance Division
Air Compliance Branch

CAA Inspection Report

Inspection Date:	8/24/2022
Facility Name:	Gloucester County Solid Waste Complex (GCSWC)
Facility Address:	503 Monroeville Rd, Swedesboro, NJ 08085
ICIS-Air ID #:	NJ0000003401555412
Facility Contact:	Kimberly Faustino, GCSWC Assistant Administrator, 856-478-4858
EPA Lead Inspector:	Joseph Cardile, Environmental Engineer, ECAD-ACB, 212-637-4054
EPA Asst. Inspector:	Victor Tu, Environmental Scientist, ECAD-ACB, 212-637-3476
EPA Asst. Inspector:	Harish Patel, Environmental Engineer, ECAD-ACB, 212-637-4046
Other Inspector(s):	Supriya Rao, EPA Environmental Engineer, LSASD-MAB, 732-321-3622
Other Inspector(s):	Omer Sohail, EPA Environmental Engineer, LSASD -MAB, 732-321-4461
State Inspector(s):	Giavanni Rizzo, NJDEP Environmental Specialist, 856-614-3622

I. Facility Background:

The Gloucester County Solid Waste Complex (GCSWC), which is owned and operated by the Gloucester County Improvement Authority (GCIA), is located at 503 Monroeville Road in Swedesboro, New Jersey. The landfill began accepting waste in 1987 and currently accepts predominantly ash and non-degradable materials. In addition to the landfill, GCSWC also includes a scale and scale house, a maintenance facility, and an administration building. The waste footprint at the facility comprises approximately 141 acres with over 18 million tons of waste disposed of at the site. At present, the landfill has placed waste in a total of 15 cells. Three additional cells are permitted for filling. At current and projected filling rates, it is anticipated that the landfill filling will be completed after 2050.

II. Pertinent Regulatory Requirements

GCSWC is subject to the new Federal Plan Requirements for Municipal Solid Waste Landfills, 40 CFR 62 Subpart 000 (Federal Plan, Subject OOO) and the National Emission Standards for Hazardous Air Pollutants for Municipal Solid Waste Landfills (MACT, Subpart AAAA). GCSWC became subject to the Federal Plan, Subpart 000, in June 2021 and is no longer subject to NSPS Subpart WWW.

III. List of Attendees

Kimberly Faustino - GCSWC Assistant Administrator
Eric Peterson - Vice President, SCS Engineers, Environmental Consultants
Joseph Cardile - EPA Environmental Engineer
Victor Tu - EPA Environmental Engineer
Harish Patel - EPA Environmental Engineer
Supriya Rao - EPA Environmental Engineer
Omer Sohail - EPA Environmental Engineer
Giavanni Rizzo – NJDEP Environmental Specialist

IV. Pre-Inspection Notification

On August 18, 2022, Inspector Cardile contacted Mr. George D. Strachan, Executive Director of GCIA, by telephone and subsequent email to confirm that EPA planned to conduct a Clean Air Act inspection of the GCSWC landfill on August 23-24, 2022 (weather permitting) that would focus primarily on methane leak detection and repair (LDAR) requirements applicable to the landfill. Inspector Cardile further explained that EPA was planning to conduct its own surface emission monitoring (SEM) during its inspection of the landfill using appropriate SEM equipment. Finally, Inspector Cardile requested that GCSWC, at the time of EPA's inspection, have available its staff and/or contractor who conducted SEM at the landfill and that EPA would like to observe GCSWC and/or its contractor perform routine calibration of their monitoring equipment and conduct comparative SEM alongside the EPA inspectors. On August 19, 2022, Mr. Strachan confirmed in an email sent to Inspector Cardile that representatives from his staff and SCS Engineers would be made available at the time of EPA's inspection.

V. Entrance Conference

On August 23, 2022, EPA Inspectors Joseph Cardile, Victor Tu, Harish Patel, Omer Sohail, and Supriya Rao ("EPA Inspectors") arrived at GCSWC's administrative offices in Swedesboro, NJ at approximately 10:00 AM. EPA Inspectors showed their credentials and were directed to the facility's administrative conference room which was located in the basement of a converted single-family residence, which also housed the facility's administrative offices. In the conference room, EPA inspectors were joined by Kimberly Faustino, GCSWC Assistant Administrator, and Eric Peterson, Vice President of SCS Engineers (SCS). Ms. Faustino further explained that Mr. Strachan, Executive Director of GCIA would not be available to participate at all in the inspection.

EPA inspectors explained that the primary purpose of EPA's inspection was to conduct SEM of the landfill following Method 21 to monitor methane emissions from the landfill surface and conduct a record review of the facility's leak detection data. In addition, EPA inspector planned to also observe GCSWC staff and/or contractor conducting monitoring equipment calibration and performing comparative LDAR alongside EPA staff during SEM. EPA Inspectors also indicated they planned to use a Forward Looking Infrared (FLIR) Camera and Toxic Vapor Analyzer (TVA) during the inspection. Mr. Peterson then explained that the SCS Engineers staff that normally perform monitoring equipment calibrations and conduct routine LDAR/SEM of this landfill were not available and would not participate on this inspection. In response, the EPA inspectors explained that since neither GCSWC or its contractor, SCS, would be conducting comparative LDAR/SEM as requested by EPA, then any methane leaks identified by the EPA inspectors would be required to be repaired by GCSWS/SCS staff as if those leaks had been discovered during the routine quarterly SEM conducted by the landfill.

Ms. Faustino explained how the landfill was constructed and waste deposited in various Phases (designated as Phases 1 through 7), one phase can encompass more than one landfill cell, the landfill currently consists of a total of 15 cells, approximately 70 % of the waste being deposited in the landfill is incinerator ash, the landfill's permitted height limitation is 220 feet, and Cell 15, which is the cell with the active face, has been opened and operating since the spring of 2021. The EPA Inspectors briefly asked if the issue with the cap not meeting the liner in the Phase 1 area of the landfill, which was identified during EPA's last inspection of the landfill in November 2018, had been resolved. Back then EPA discovered significant methane leaks near the toe drain in the Phase 1 area of the landfill, and GCSWC staff explained that the design/installation of the cap was done incorrectly, and essentially, the cap did not meet the liner. Ms. Faustino explained that that issue had not yet been resolved. We next discussed how EPA recently came across an SCS request seeking EPA permission to operate at least one well on the landfill with elevated temperature. During this discussion, it came to light that SCS had submitted more than one Wellhead Higher Operating Value (HOV) request to EPA for approval and at the EPA inspectors' request, SCS agreed to consolidate all of their HOV requests into one new request to submit to EPA.

VI. Summary of Observations

At about 11:00 AM on August 23, 20022, the EPA inspectors along Mr. Peterson began conducting SEM on the GCSWC landfill which lasted for two days. The EPA team consisting of Inspectors Rao and Sohail performed EPA's SEM and recorded leak monitoring data on the landfill. The EPA team detected and identified many methane leaks (i.e., leaks in excess of 500 ppm) throughout the landfill including several readings that exceeded 10,000 ppm. Leaks were found at the bases of wellheads, flanges, covers, vents, and pipe protrusions from the top of the rain tarp covering the side slopes in Phases 2, 3 and 4. This tarp, which was installed for erosion control, also acts to collect landfill gas and funnel it upward to the upper edge of the tarp to be collected. There is no landfill gas collection on the side slopes where the tarp is located to control these emissions.

Overall, EPA inspectors completed SEM over a portion of the landfill's surface area and surface penetrations in a relatively short two-day timeframe. EPA Inspectors discovered approximately 20 methane leak events in excess of 500 ppm out of approximately 90 points sampled on the landfill. This equates to a methane leak hit rate in excess of 20%. A comprehensive list, which includes the name, location, and the methane amount measured at each sampled point, is shown in Table 1 of this report titled "EPA Exceedance Report".

VII. Closing Conference:

At the closing conference, EPA inspectors explained that EPA does not provide compliance determinations on its inspections and how all CAA compliance determinations required EPA Supervisory review/approval. However, EPA inspectors discussed the number of methane leak events (i.e., methane leaks in excess of 500 ppm) they had identified and documented while conducting their own SEM. EPA inspectors also pointed out that GCSWC had reported zero methane leak events for each of the last five calendar quarters after conducting SEM of the entire landfill in each of those quarters. EPA inspectors re-stated that the leaks they had identified during SEM would need to be repaired and re-monitored as required by the regulations and the list of leaks identified by EPA would be provided to GCUA via email within the next few days. It was also agreed at the closing meeting that the required timeframe to repair these leaks would start upon GCSWC's receipt of EPA's leak results.

EPA inspectors again expressed concern that the issue with the cap not meeting the liner in the Phase 1 area of the landfill had not yet been resolved especially given that GCSWC is now subject to the full gas collection control system operational, monitoring and reporting requirements contained in the Landfill NSPS. Furthermore, EPA inspectors requested additional follow-up information and documents from GCSWC that included, among other things, copies of wellhead monitoring data and records going back two years (i.e., temperature, nitrogen, and oxygen) and copies of landfill gas (LFG) flow rate data to the flare going back two years along with semi-annual gas composition and speciation data (i.e., TO15 analysis) of the LFG gas. EPA inspectors also reminded SCS that they had agreed to submit a new consolidated wellhead temperature HOV request to EPA for review/approval. Finally, the EPA inspectors thanked Ms. Faustino and Eric Peterson for their cooperation and availability during its two-day inspection of Gloucester County Landfill. This concluded the EPA inspection and the EPA inspectors left the landfill at approximately 4 pm EST on August 24, 2022.

Table 1: EPA Exceedance Report:

United States Environmental Protection Agency
2890 Woodbridge Avenue, Edison, NJ 08837
Monitoring and Assessment Branch
Surface Emissions Monitoring - Leak Detection and Repair

Gloucester County Landfill/Gloucester County Solid Waste Complex
503 Swedesboro-Monroeville Road, South Harrison Twp., NJ 08085

Date of Inspection: August 23-24, 2022
Weather: August 23: 77^0 F, Sunny, Wind 7 MPH, Visibility - 10 miles, perfectly clear
August 24: 90^0 F, Sunny, Wind 6 MPH, Visibility - 10 miles, perfectly clear

Sample ID	Concentration (ppm)	Location of Sample	Latitude	Longitude
Upwind - Aug 23rd	0.5	Ambient	39.7055661	-75.284224
Downwind - Aug 23rd	0.8	Ambient	39.7163334	-75.2852151
Flange 1 near flare	1.2	Flange	39.7165085	-75.2852843
Flange 2 near flare	1.2	Flange	39.7164779	-75.2853374
Flange 3 near flare	1.5	Flange	39.7164693	-75.285367
Flange 4 near flare	1.2	Flange	39.7164565	-75.2854544
Clean out pipe @flange	1.5	Flange	39.721695	-75.2767181
GW 21	1.7	Base	39.7141088	-75.2855959
GW 19	1.7	Base	39.7139602	-75.2849652
GW 16	1.8	Base	39.7081672	-75.2780607
GW 15	1.8	Base	39.7143877	-75.2842178
GW 14	1.8	Base	39.7204059	-75.2875487
GW 11	1.8	Base	39.715103	-75.283883
GW 10	1.9	Base	39.714678	-75.28359
GW 9	1.9	Base	39.7141864	-75.2832208
RT 06	1.0	Base	39.7136877	-75.2868158
GW 24	1.1	Base	39.7141205	-75.2869883
GW 26	1.2	Base	39.7135659	-75.2864631
GW 28	1.1	Base	39.7124621	-75.2859861
Clean out valves	0.5	Valve	39.712064	-75.285846
GW 29	350	Base	39.7120429	-75.2858431
GW 30	60,000	Base	39.735528	-75.3002606
Pipe 1 under cover	700	Base	39.7114349	-75.2855764
Pipe 2 under cover	600	Base	39.7114558	-75.2855905
GW 31	1.7	Base	39.71112	-75.285506
GW 32	1.1	Base	39.710785	-75.285312
GW 47	27	Base	39.7096149	-75.2842145
GW 45	25	Base	39.7095971	-75.284183
GW 47	7,000	Base	39.7090676	-75.2841645
GW 56	11,000	Base	39.7238088	-75.2753695
	9,000	Flange		
GW R56	649	Base	39.7079357	-75.2829658
GW 57	32	Base	39.7079344	-75.2829913
GW R53	1.7	Base	39.7076867	-75.2838031
GW 54	1.0	Base	39.7077399	-75.2837124
GW 52	2.6	Base	39.7071586	-75.2839962
GW 51	1072	Base	39.7068391	-75.2841172

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Sample ID	Concentration (ppm)	Location of Sample	Latitude	Longitude
GW 50 (Connection between yellow pipe and connector)	600	Connector	39.7149865	-75.2875251
Clean out pipe	36	Base	39.7074589	-75.2848828
GW 44	26	Base	39.7074837	-75.2848374
GW 43	2,700	Base	39.7079093	-75.2841215
GW 41	1,800	Base	39.708381	-75.284758
SC01	3,200	Base	39.7083764	-75.2847418
Connector #1 near SC01	1,600	Base	39.7084179	-75.2847353
Connector # 2 near SC 01	1,100	Base	39.7084048	-75.2847322
GW 37	139	Flange	39.7092479	-75.2848644
Upwind - Aug 24th	0.7	Ambient	39.7074574	-75.2782962
Downwind - Aug 24th	0.5	Ambient	39.7157443	-75.2896758
Clean out 1	36	Base	39.71452	-75.282054
Manhole	1	Cover	39.7146038	-75.2820613
Pump station 1A	39	Base	39.7149531	-75.2820888
LDMH4	1.2	Base	39.715286	-75.2824965
Liner 1	1.5	Surface	39.7163432	-75.2865775
Liner 2	3.7	Surface	39.7161884	-75.2866697
VV3S	2,658	Cover	39.7162871	-75.28725
VV3P	1,092	Cover	39.7162377	-75.2872591
PWW3	1.2	Cover	39.716234	-75.2872474
SWW3 vent	3,040	Vent	39.7162315	-75.2872387
MW	2	Cover	39.716153	-75.2875488
VV5S	1.9	Cover	39.7159944	-75.287937
VV5P	68	Cover	39.7159808	-75.2879691
MW205S	2.2	Cover	39.7157689	-75.2886126
LDMH12	2.2	Cover	39.7129342	-75.2879887
VV2	7.8	Flange	39.7127912	-75.2879088
Cell 10b	5.8	Flange	39.7103	-75.2873702
Cell 11b	11.2	Flange	39.7085227	-75.2871699
Cell 12	2.5	Flange	39.707227	-75.2863064
Cell 13	2.6	Flange	39.7062099	-75.2856225
Cell 15	2.4	Flange	39.706905	-75.285537
Vent behind Cell 15	19,000	Vent	39.7101563	-75.2809093
Cell 14	1.8	Flange	39.7098762	-75.2817203
SC02	55	Base	39.7087805	-75.2823434
SC03	4.2	Base	39.7086337	-75.2822245

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Sample ID	Concentration (ppm)	Location of Sample	Latitude	Longitude
SC04	1,372	Base	39.7084069	-75.2820183
SC05	1,112	Base	39.7081677	-75.2818889
SC06	268	Base	39.708168	-75.281889

Lead Inspector's Name: Joseph Cardile

10/25/2022

X Joseph Cardile

Lead Inspector
Signed by: JOSEPH CARDILE

Assisting Inspector's Name: Victor Tu

10/25/2022

X Victor Tu

Assisting Inspector
Signed by: VICTOR TU

Supervisor's Name: Harish Patel

10/26/2022

X Harish Patel

Supervisor
Signed by: Environmental Protection Agency